

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-024010**Date Inspected:** 22-Apr-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 1500**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 300**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Mr. Li Yan Hua**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector,Baskar Govindarajan, was present during the times noted above for observations relative to the work being performed.

Bay #16

This QA Inspector observed the following work in progress

**Shielded Metal Arc Welding (SMAW)**

Weld joint- 002, Located on Bike path Hand rails, FS8. Welder is identified as 064459. ZPMC Quality Control Inspector (QC) is identified as Zhen Zhu Wei. The welding variables recorded by QC appeared to comply with the WPS-B-P-2112.

Weld joint- 001, Located on Bike path Hand rails, FS12. Welder is identified as 201861. ZPMC Quality Control Inspector (QC) is identified as Zhen Zhu Wei. The welding variables recorded by QC appeared to comply with the WPS-B-P-2112.

**Magnetic Particle Testing (MT)**

The following Non Destructive Testing (NDT) inspection carried out as per the ZPMC submitted Notification No. 08903.

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## WELDING INSPECTION REPORT

( Continued Page 2 of 4 )

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This QA inspector performed (MT) of approximately 15% of an area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. This QA Inspector generated a TL 6028 MT report for this date. The member is identified as OBG Crash Barrier components. The weld designations reviewed are as follows:

E5-SB26A-001  
W2-SB19-001  
E2-SB25C-001  
E2-SB26A-001  
E2-SB25D-001  
W5-SB31-003  
E2-SB23-001, 002

This QA Inspector observed the following work not in compliance:

### Description of Incident:

During Quality Assurance Magnetic Particle Testing (MT) review of welds located on Orthotropic Box Girder (OBG) Crash Barriers, this Quality Assurance Inspector (QA) discovered the following issues:

- One Longitudinal Linear indication measuring approximately 27 mm in length on Crash Barrier E2-SB23-001.
- The weld is identified as: E2-SB23-001-053.
- This weld is a fillet weld joining Bottom plate and Diaphragm plate.
- The “Y” location is approximately 0 mm from Top side of the weld termination.(Cop hole side)
- The bottom plate thickness is 25 mm and Diaphragm plate thickness is 10mm.
- The Indication is clearly marked on the material near the weld.
- This Crash barrier E2-SB23-001 is located in Bay 16.
  
- Three (3) Longitudinal Linear indication measuring approximately 19mm, 20mm and 18mm in length on Crash Barrier E2-SB23-002.
- The weld is identified as: E2-SB23-002-085.
- This weld is a fillet weld joining Bottom plate and Diaphragm plate.
- The “Y” location is approximately 0 mm, 30mm and 135mm from Top side of the weld termination.(Cop hole side)
- The bottom plate thickness is 25 mm and Diaphragm plate thickness is 10mm.
- The Indication is clearly marked on the material near the weld.
- This Crash barrier E2-SB23-002 is located in Bay 16.

The Notice of Witness Inspection Number (NWIT) is 08903. The indication is located within an area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel.

Applicable reference:

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## WELDING INSPECTION REPORT

( Continued Page 3 of 4 )

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AWS D1.5 (02) Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks”.

Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

This QA notified ZPMC QC identified as Mr. Zhang Zhi Wei and ABF inspector identified as Mr. Liu Tao of the above issue and that an incident report will be generated.

Bay #19

This QA Inspector observed the following work in progress,

Flux Cored arc welding (FCAW)

Repair welding of Weld joint- X 6042A/B as per CWR no. B-CWR-2938, Located on Cable Bracket SA6030. Welder is identified as 062807. ZPMC Quality Control Inspector (QC) is identified as Gao Xing Hui. The welding variables recorded by QC appeared to comply with the WPS-345-FCAW-1G (1F) –Esab-Repair.

Shielded Metal Arc Welding (SMAW)

Repair welding of Weld joint- X 64B as per CWR no. B-CWR-2877, Located on Suspender Bracket SB23-106E. Welder is identified as 259566. ZPMC Quality Control Inspector (QC) is identified as Gao Xing Hui. The welding variables recorded by QC appeared to comply with the WPS-345-SMAW-1G (1F) –Repair.

For further information see below pictures:-

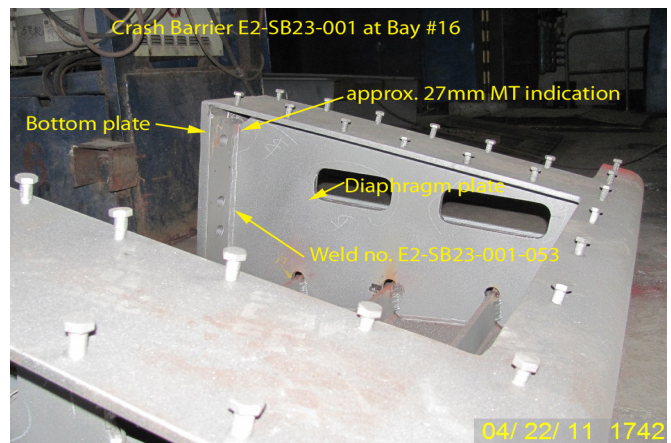
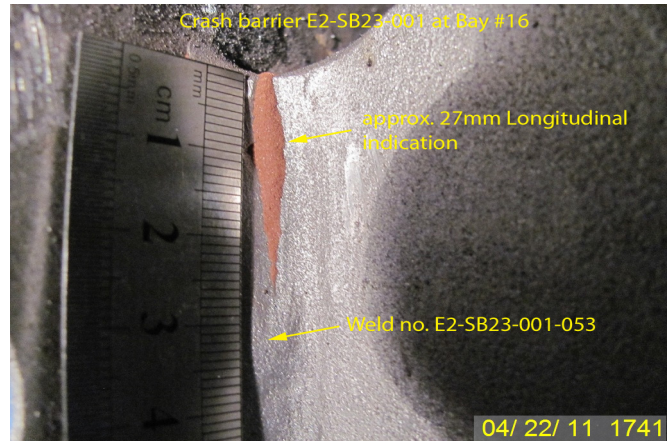
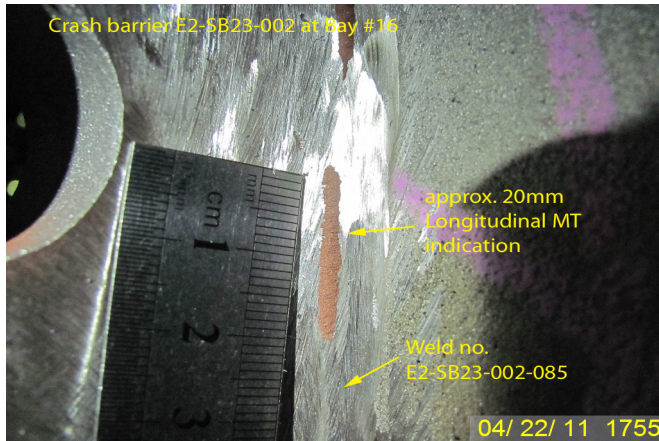
Unless otherwise noted, all work observed on this date appeared to be in general compliance with the applicable contract documents.

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# WELDING INSPECTION REPORT

( Continued Page 4 of 4 )

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## Summary of Conversations:

No relevant Conversations.

## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang (15000422372), who represents the Office of Structural Materials for your project.

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**Inspected By:** Baskar, Govindarajan

Quality Assurance Inspector

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**Reviewed By:** Clifford, William

QA Reviewer